

Homework 6

Consider the program with a built-in predicate $s(., ., ., .)$:

$p(X, Y) \leftarrow q(X, X, Z, Y), q(X, Z, W, 0).$

$q(A, B, C, D) \leftarrow p(A, B), p(C, D).$

$q(A, B, C, D) \leftarrow s(A, B, C, D).$

a) Find the number of stable models of the program if predicate $s(., ., ., .)$ holds for all tuples of integers $[A, B, C, D]$ such that $A + B + C = D$.

Explain.

b) Find allowed adornments of the predicates $p(., .)$ and $q(., ., ., .)$, if the only forbidden adornment for $s(., ., ., .)$ is s^{ffff} . Explain.

c) Rectify the program (avoid constants and repeated variables in IDB goals).